

2018 Industrial Hemp Research Pilot Program Agronomic

Report Summary

The Tennessee Department of Agriculture (TDA) issued 226 Industrial Hemp Growers Licenses for the 2018 growing season (Figure 1, Table 1). Each grower is required to submit an agronomic report to the Tennessee Department of Agriculture for each crop grown. The data collected is used to compile the agronomic report summary, however not all farmers complete an agronomic report or submit useable data. Seventy six (76) growers did not plant, leaving 150 growers to plant 1034 acres of hemp in Tennessee. The largest field grown was 250 acres in Macon County for fiber. This is the first year TDA allowed domestic seed/plants to be grown in Tennessee (Table 2). Each imported variety was approved and inventoried by TDA. TDA inventoried 3,430,080 plants and 1,607lbs of seed of 53 varieties. The most widely planted varieties were Sweetened, Franklin and Cannaboost.

Growers reported on 221 fields. Of the reporting 150 growers, 55% have an occupation in the field of agriculture and average 15 years of experience. Most of the hemp that was grown was for the production of hemp oil. A few farmers contracted with fiber processors in KY. Some sort of fertilizer was used on 172 fields. Most farmers (103 fields) used organic fertilizers (compost, worm castings, manure) instead of conventional fertilizers (20-20-20). No correlation between organic or conventional methods can be made of impact on yields. Growers harvested 90% of what was planted. Planting data is summarized in Table 3, and harvest yields are summarized in Table 4. No significant correlations between planting conditions and yields could be determined. Only 10 growers reported seed yields, with 78% being harvested by one farmer. Fifteen growers reported fiber yields with the largest field counting for 97% of total yields. The variety that farmer grew was SSalpha imported from Sunstrand in KY. Growers reported flower yields from 118 fields this season. The lowest report was .1lbs, and the greatest yield was 8,000lbs—both were CBDawg. Thirty four growers reported harvesting the entire plant, with the greatest value of 45,000lbs. That variety was Sweetened. Harvest yields are the highest they have been since the program started. Factors contributing to this may include: better adapted varieties, more experienced farmers, and adding fertilizer.

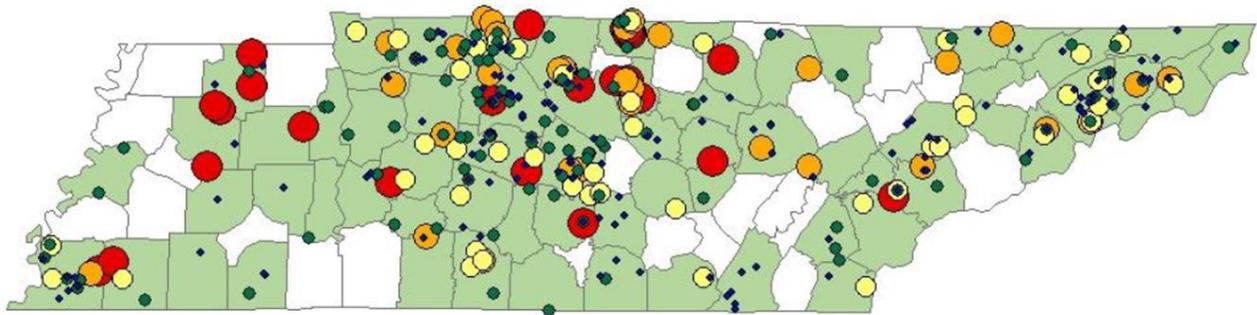
Out of 226 growers, 48 reported to have sold some part of their crop. There are currently no herbicides registered by EPA for use in hemp, so all weed control was accomplished by mechanical means. Growers also continue to struggle with weed suppression. Insects of concern for growers include: corn worm, aphids, mites, caterpillars, thrips, white flies, slugs, grasshoppers, fungus gnats, and a variety of beetles. Disease issues for 2018 included bud rot, fungal leaf spots, root rot, southern blight, and powdery mildew. Out of the growers who planted, the agronomic reports show that the growers spent approximately \$2,301/acre grown this year and \$10,521/grower. The three top expenses were land, equipment, and labor. Growers spent the least on acreage fees, inspections, and interest (Table 5). The largest market appears to be in hemp oil high in cannabinoids.

Disclaimer: This information was derived from the agronomic reports received and is only as accurate as the data collected from the growers.

Figure 1.

2018 Industrial Hemp Growing Areas

226 Licensees
385 Fields Approximating 4768 Acres



Hemp Growing Areas in Acres

- 1 or Less
- 1.1- 5
- 5.1 - 10
- 10.1 - 20
- 20.1 or Greater

Table 1.

<u>County</u>	<u>Licenses</u>	<u>County</u>	<u>Licenses</u>	<u>County</u>	<u>Licenses</u>
Anderson	1	Hardin	1	Robertson	9
Bedford	3	Hawkins	2	Rutherford	12
Benton	1	Henry	1	Scott	1
Blount	5	Hickman	3	Shelby	8
Carroll	1	Houston	2	Smith	3
Carter	1	Humphreys	2	Stewart	3
Cheatham	5	Jackson	1	Sullivan	6
Claiborne	3	Johnson	1	Sumner	3
Cocke	4	Knox	6	Unicoi	1
Coffee	4	Lauderdale	1	Union	1
Cumberland	4	Lawrence	1	Van Buren	1
Davidson	16	Lewis	2	Warren	1
DeKalb	4	Lincoln	1	Washington	2
Dickson	2	Loudon	1	Weakley	4
Fayette	3	Macon	7	White	2
Fentress	2	Marion	1	Williamson	15
Franklin	2	Marshall	2	Wilson	6
Gibson	1	Maury	6		
Giles	3	McMinn	4		
Grainger	1	McNairy	2		
Greene	12	Monroe	1		
Hamilton	7	Montgomery	8		
Hancock	2	Polk	3		
Hardeman	1	Putnam	1		

Table 2.

<u>Variety</u>	<u>Variety</u>	<u>Variety</u>	<u>Variety</u>
Otto II	Authentic	CBDawg x FrostedLime	2nd Generation
BaOX	Ottoll	Cherry Harvest	Randy
Futura75	AC/DC	Cherry West	Victoria
Late Sue	Wildhorse	Suver Haze	USO 31
Cherry	A-2	Mimi1	Otto 2nd Generation
Fibranova	Cherry Wine	Endurance	Cherry Mom
Franklin	Z-1	Stout	Original Cherry
Sweet	CHG	Sweetened	Bubblegum
Mr. Green	CBDawg	Workhorse	Oregon Emerald
Cannaboost	CitrusFireXCBDawg	Northwest	Citrus Fire
24724-CN	Siskiyou Gold	HK12	T-1
Youngsim10	CC	Elektra	Lifter
The Wife	Midwest	Super CBD	OT

Table 3.

Acres Planted	Acres Grown	Acres Harvested
1,033	978	925

Table 4.

Seed Yields Lbs	Fiber Yields Lbs	Flower Yields Lbs	Whole Plant Yields Lbs
3,838	514,012	82,178	71,933

Table 5.

Fee	Total Spent
Acreage Fee	\$2,418.00
Sampling Fee	\$46,425.00
Inspection Fee	\$10,745.17
Seed	\$295,251.00
Fertilizers/Additives	\$105,665.74
Land	\$412,162.56
Equipment	\$343,312.88
Labor	\$647,617.50
Irrigation/Water	\$59,018.19
Security	\$70,893.74
Interest	\$19,411.00
Transportation	\$40,224.84
Other	\$324,671.62
Total	\$2,377,817.24